



Application No.: 10/773,671
Amendment dated May 11, 2006
Reply to Office Action of 1/12/06
REPLACEMENT SHEET

Fig.2

⟨16 LAYERS($\lambda = 750\text{nm}$)⟩

LAYER	MATERIAL	OPTICAL THICKNESS	
1	TiO ₂	0.2707	\geq (QUARTER-WAVE)
2	SiO ₂	0.2577	
3	TiO ₂	0.2115	\leq (QUARTER-WAVE)
4	SiO ₂	0.2287	
5	TiO ₂	0.2323	\geq (QUARTER-WAVE)
6	SiO ₂	0.2476	
7	TiO ₂	0.2729	\leq (QUARTER-WAVE)
8	SiO ₂	0.2885	
9	TiO ₂	0.3011	\geq (QUARTER-WAVE)
10	SiO ₂	0.3196	
11	TiO ₂	0.3238	\leq (QUARTER-WAVE)
12	SiO ₂	0.3304	
13	TiO ₂	0.3372	
14	SiO ₂	0.3265	
15	TiO ₂	0.3064	
16	SiO ₂	0.1402	

(FIRST EMBODIMENT)

Fig.3

⟨18 LAYERS($\lambda = 750\text{nm}$)⟩

LAYER	MATERIAL	OPTICAL THICKNESS	
1	TiO ₂	0.2643	\geq (QUARTER-WAVE)
2	SiO ₂	0.2574	
3	TiO ₂	0.2181	\leq (QUARTER-WAVE)
4	SiO ₂	0.2268	
5	TiO ₂	0.2298	\geq (QUARTER-WAVE)
6	SiO ₂	0.2401	
7	TiO ₂	0.2654	\leq (QUARTER-WAVE)
8	SiO ₂	0.2724	
9	TiO ₂	0.2799	\geq (QUARTER-WAVE)
10	SiO ₂	0.2942	
11	TiO ₂	0.3172	\leq (QUARTER-WAVE)
12	SiO ₂	0.3240	
13	TiO ₂	0.3341	\geq (QUARTER-WAVE)
14	SiO ₂	0.3340	
15	TiO ₂	0.3331	\leq (QUARTER-WAVE)
16	SiO ₂	0.3193	
17	TiO ₂	0.3004	\geq (QUARTER-WAVE)
18	SiO ₂	0.1455	

(SECOND EMBODIMENT)

Fig.4

〈20 LAYERS($\lambda = 750\text{nm}$)〉

LAYER	MATERIAL	OPTICAL THICKNESS
1	TiO ₂	0.2726
2	SiO ₂	0.2567
3	TiO ₂	0.2203
4	SiO ₂	0.2370
5	TiO ₂	0.2197
6	SiO ₂	0.2404
7	TiO ₂	0.2462
8	SiO ₂	0.2786
9	TiO ₂	0.2838
10	SiO ₂	0.2773
11	TiO ₂	0.2998
12	SiO ₂	0.3232
13	TiO ₂	0.3159
14	SiO ₂	0.3300
15	TiO ₂	0.3352
16	SiO ₂	0.3349
17	TiO ₂	0.3397
18	SiO ₂	0.3162
19	TiO ₂	0.3105
20	SiO ₂	0.1527

 } \geq (QUARTER-WAVE)
 } \leq (QUARTER-WAVE)
 } \geq (QUARTER-WAVE)
 } \leq (QUARTER-WAVE)

(THIRD EMBODIMENT)

Fig.5

⟨22 LAYERS($\lambda = 750\text{nm}$)⟩

LAYER	MATERIAL	OPTICAL THICKNESS	
1	TiO ₂	0.2695	\geq (QUARTER-WAVE)
2	SiO ₂	0.2561	
3	TiO ₂	0.2167	\leq (QUARTER-WAVE)
4	SiO ₂	0.2351	
5	TiO ₂	0.2204	\geq (QUARTER-WAVE)
6	SiO ₂	0.2435	
7	TiO ₂	0.2525	\leq (QUARTER-WAVE)
8	SiO ₂	0.2749	
9	TiO ₂	0.2767	\geq (QUARTER-WAVE)
10	SiO ₂	0.2727	
11	TiO ₂	0.2985	\leq (QUARTER-WAVE)
12	SiO ₂	0.3100	
13	TiO ₂	0.3108	\geq (QUARTER-WAVE)
14	SiO ₂	0.3245	
15	TiO ₂	0.3221	\leq (QUARTER-WAVE)
16	SiO ₂	0.3241	
17	TiO ₂	0.3424	\geq (QUARTER-WAVE)
18	SiO ₂	0.3321	
19	TiO ₂	0.3393	\leq (QUARTER-WAVE)
20	SiO ₂	0.3227	
21	TiO ₂	0.3095	\geq (QUARTER-WAVE)
22	SiO ₂	0.1551	

(FOURTH EMBODIMENT)

Fig.6

$\langle 24 \text{ LAYERS} (\lambda = 750\text{nm}) \rangle$

LAYER	MATERIAL	OPTICAL THICKNESS	
1	TiO ₂	0.2711	\geq (QUARTER-WAVE)
2	SiO ₂	0.2559	
3	TiO ₂	0.2103	\leq (QUARTER-WAVE)
4	SiO ₂	0.2362	
5	TiO ₂	0.2230	\geq (QUARTER-WAVE)
6	SiO ₂	0.2417	
7	TiO ₂	0.2560	\leq (QUARTER-WAVE)
8	SiO ₂	0.2686	
9	TiO ₂	0.2732	\geq (QUARTER-WAVE)
10	SiO ₂	0.2685	
11	TiO ₂	0.2894	\leq (QUARTER-WAVE)
12	SiO ₂	0.3020	
13	TiO ₂	0.3027	\geq (QUARTER-WAVE)
14	SiO ₂	0.3210	
15	TiO ₂	0.3258	\leq (QUARTER-WAVE)
16	SiO ₂	0.3229	
17	TiO ₂	0.3337	\geq (QUARTER-WAVE)
18	SiO ₂	0.3264	
19	TiO ₂	0.3449	\leq (QUARTER-WAVE)
20	SiO ₂	0.3411	
21	TiO ₂	0.3417	\geq (QUARTER-WAVE)
22	SiO ₂	0.3203	
23	TiO ₂	0.3067	\leq (QUARTER-WAVE)
24	SiO ₂	0.1517	

(FIFTH EMBODIMENT)

Fig.7

〈26 LAYERS($\lambda = 750\text{nm}$)〉

LAYER	MATERIAL	OPTICAL THICKNESS	
1	TiO ₂	0.2680	≥(QUARTER-WAVE)
2	SiO ₂	0.2560	
3	TiO ₂	0.2139	≤(QUARTER-WAVE)
4	SiO ₂	0.2257	
5	TiO ₂	0.2308	≥(QUARTER-WAVE)
6	SiO ₂	0.2377	
7	TiO ₂	0.2593	≤(QUARTER-WAVE)
8	SiO ₂	0.2591	
9	TiO ₂	0.2655	≥(QUARTER-WAVE)
10	SiO ₂	0.2604	
11	TiO ₂	0.2724	≤(QUARTER-WAVE)
12	SiO ₂	0.2812	
13	TiO ₂	0.2832	≥(QUARTER-WAVE)
14	SiO ₂	0.2958	
15	TiO ₂	0.3152	≤(QUARTER-WAVE)
16	SiO ₂	0.3221	
17	TiO ₂	0.3297	≥(QUARTER-WAVE)
18	SiO ₂	0.3277	
19	TiO ₂	0.3277	≤(QUARTER-WAVE)
20	SiO ₂	0.3320	
21	TiO ₂	0.3433	≥(QUARTER-WAVE)
22	SiO ₂	0.3362	
23	TiO ₂	0.3322	≤(QUARTER-WAVE)
24	SiO ₂	0.3119	
25	TiO ₂	0.3010	≥(QUARTER-WAVE)
26	SiO ₂	0.1480	

(SIXTH EMBODIMENT)

Fig.9

(18 LAYERS($\lambda = 750\text{nm}$))

LAYER	MATERIAL	OPTICAL THICKNESS	
1	TiO ₂	0.256	\geq (QUARTER-WAVE)
2	MgF ₂	0.260	
3	TiO ₂	0.228	\leq (QUARTER-WAVE)
4	MgF ₂	0.227	
5	TiO ₂	0.238	\leq (QUARTER-WAVE)
6	MgF ₂	0.233	
7	TiO ₂	0.263	\geq (QUARTER-WAVE)
8	MgF ₂	0.269	
9	TiO ₂	0.279	\leq (QUARTER-WAVE)
10	MgF ₂	0.281	
11	TiO ₂	0.314	\geq (QUARTER-WAVE)
12	MgF ₂	0.321	
13	TiO ₂	0.337	\leq (QUARTER-WAVE)
14	MgF ₂	0.324	
15	TiO ₂	0.318	\geq (QUARTER-WAVE)
16	MgF ₂	0.317	
17	TiO ₂	0.314	\leq (QUARTER-WAVE)
18	MgF ₂	0.157	

(SEVENTH EMBODIMENT)

Fig.10

$\langle 20 \text{ LAYERS} (\lambda = 750\text{nm}) \rangle$

LAYER	MATERIAL	OPTICAL THICKNESS	
1	TiO ₂	0.277	\geq (QUARTER-WAVE)
2	MgF ₂	0.257	
3	TiO ₂	0.218	\leq (QUARTER-WAVE)
4	MgF ₂	0.239	
5	TiO ₂	0.228	\geq (QUARTER-WAVE)
6	MgF ₂	0.238	
7	TiO ₂	0.265	\leq (QUARTER-WAVE)
8	MgF ₂	0.277	
9	TiO ₂	0.273	\geq (QUARTER-WAVE)
10	MgF ₂	0.275	
11	TiO ₂	0.293	\leq (QUARTER-WAVE)
12	MgF ₂	0.302	
13	TiO ₂	0.302	\geq (QUARTER-WAVE)
14	MgF ₂	0.322	
15	TiO ₂	0.330	\leq (QUARTER-WAVE)
16	MgF ₂	0.331	
17	TiO ₂	0.327	\geq (QUARTER-WAVE)
18	MgF ₂	0.317	
19	TiO ₂	0.317	\leq (QUARTER-WAVE)
20	MgF ₂	0.156	

(EIGHTH EMBODIMENT)

Fig.13

⟨21 LAYERS($\lambda = 750\text{nm}$)⟩

LAYER	MATERIAL	OPTICAL THICKNESS	
	Al_2O_3	0.1323	
1	TiO_2	0.2570	\geq (QUARTER-WAVE)
2	SiO_2	0.2501	
3	TiO_2	0.2235	
4	SiO_2	0.2258	\leq (QUARTER-WAVE)
5	TiO_2	0.2344	
6	SiO_2	0.2370	
7	TiO_2	0.2588	
8	SiO_2	0.2639	
9	TiO_2	0.2788	
10	SiO_2	0.2819	
11	TiO_2	0.3026	
12	SiO_2	0.3109	\geq (QUARTER-WAVE)
13	TiO_2	0.3209	
14	SiO_2	0.3240	
15	TiO_2	0.3320	
16	SiO_2	0.3304	
17	TiO_2	0.3399	
18	SiO_2	0.3214	
19	TiO_2	0.3115	
20	SiO_2	0.1515	\leq (QUARTER-WAVE)

(NINTH EMBODIMENT)